Ultramet-L[®] 4400 Series Filter Assembly (1.5 nm)



Data Sheet MEUL44ENa

Description

The Ultramet-L[®] 4400 Series Filter Assembly is available with an all 316L stainless steel housing and either a 316L stainless steel or nickel filter. It is designed for ≥ 1.5 nanometer filtration of semiconductor grade gases. The 4400 series filter is recommended for all applications with process gases that are compatible with 316L stainless steel or nickel. For applications with corrosive gases, such as halogen containing acid gases, the nickel filter assembly is recommended only if the gas is known to be anhydrous.

Features & Benefits

- State-of-the-art 316L stainless steel or nickel media
- Preconditioned to ultraclean levels
- Excellent particle removal efficiency vs. pressure drop
- Accommodates extremely high flow rates for the assembly size
- Excellent gas displacement and desorption characteristics
- High temperature and pressure capabilities
- Compact size for ease of installation
- Wide variety of fitting options available
- 100% helium leak tested
- Cleanroom manufactured and packaged
- Housing material meets or exceeds VIM VAR specifications.

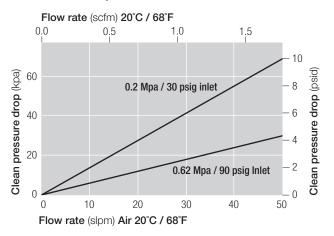


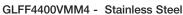
Specifications

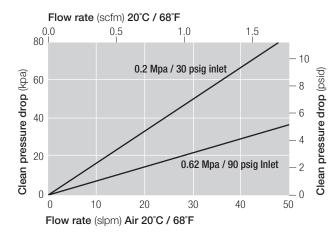
Filter Medium	316L stainless steel or nickel		$\frac{1}{4}$ ", $\frac{1}{2}$ " Gasket Seal, Male / Male
Internal Surface	≤ 0.18 mm / 7 µin R₃	Connections	(VCR ¹ or compatible)
Finish			¹ /4" Butt Weld (0.035″ / 0.89 mm wall)
Internal Surface Chemistry	Cr:Fe (1:1) Chromium enriched	Maximum Operating	20.7 MPa at $38 \degree C/3,000 \text{ psig at } 100 \degree \text{F};$
	Electropolished 316L stainless steel	Pressure	11.6 MPa at 450 °C7 1,685 psig at 840 °F
Finish Internal Surface Chemistry Housing Housing VAR PLU exceeds Removal Rating ≥ 1.5 nm <10 ppb	housing	Maximum Allowable	316L Stainless Steel Filter: 0.9 MPa at 38 °C / 125 psid at 100 °F; 0.4 MPa at 450 °C / 60 psid at 840 °F
	VAR PLUS housing material meets or exceeds typical VIM / VAR specifications		
Removal Rating	≥ 1.5 nm	Differential Pressure	Nickel Filter:
	< 10 ppb moisture contribution	Ficssure	0.5 MPa at 426 °C / 75 psid at 800 °F
	(Qualified per SEMSPEC test method #90120397B-STD)	Particle Removal Characteristics	10º particle reduction at 50 slpm / 1.76 scfm
	< 10 ppb THC contribution (Qualified per SEMSPEC test method #90120396B-STD)	Leak Rating	100% helium leak tested to 10 ⁻⁹ atm·cm ³ /s
Cleanliness*	< 10 ppb O ₂ contribution	5	9 0.9 MPa at 38 °C / 125 psid at 100 0.4 MPa at 450 °C / 60 psid at 840 Nickel Filter: 1.0 MPa at 38 °C / 150 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 800 °C 0.5 MPa at 426 °C / 75 psid at 800 °C 0.5 MPa at 426 °C / 75 psid at 800 °C 0.5 MPa at 426 °C / 75 psid at 800 °C 0.5 MPa at 426 °C / 75 psid at 800 °C 0.5 MPa at 426 °C / 75 psid at 800 °C 0.5 MPa at 426 °C / 75 psid at 800 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 68 °C 0.5 MPa at 426 °C / 75 psid at 426 °C / 75 psid at 68 °C / 75 psid at 426 °C / 75 °C / 75 psid
	(Qualified per SEMSPEC test method #90120398B-STD)	EU Pressure Equipment	Assemblies have been evaluated and are CE marked per the European Union's
	No particle contribution above background	Directive	Pressure Equipment Directive 2014/68/EU
	≤ 1 particle / (ft³ or m³)	* Gasket Seal only fittings.	
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¹ VCR is a trademark of Swagelok Co.

Pressure Drop vs. Gas Flow Rate

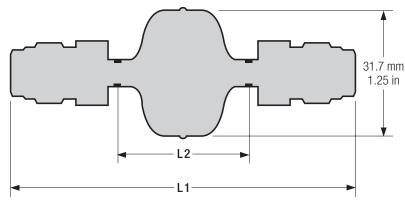






GLFN4400VMM4 - Nickel

Dimensions



Part Numbers / Ordering Information

Part Number	Description	Fitting Type (in / mm)	Length (L)
GLFF4400VMM4	All 316L Stainless Steel 		3.31 / 84 (L ₁)
GLFF4400BW4	All 316L Stainless Steel	1/4" Butt Weld, 0.035" / 0.89 mm wall	1.75 / 45 (L ₂)
GLFN4400VMM4	Nickel Media, 316L Stainless Steel Housing	1/4" Gasket Seal (VCR or Compatible) Male / Male	3.31 / 84 (L ₁)
GLFN4400VFM4	Nickel Media, 316L Stainless Steel Housing	1/4" Gasket Seal (VCR or Compatible) Female Inlet / Male Outlet	2.80 / 71 (L ₁)
GLFN4400VMF4	Nickel Media, 316L Stainless Steel Housing	1/4" Gasket Seal (VCR or Compatible) Male Inlet / Female Outlet	2.80 / 71 (L ₁)
GLFN4400VMM8	Nickel Media, 316L Stainless Steel Housing	$\frac{1}{1}$ Gasket Seal (VCR or Compatible) Male / Male	3.31 / 84 (L ₁)
GLFN4400BW4	Nickel Media, 316L Stainless Steel Housing	½" Butt Weld, 0.035" / 0.89 mm wall	1.75 / 44 (L ₂)

Unit conversion: 1 bar = 100 kilopascals



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6-5-1, Nishishinjuku, Shinjuku-ku Tokyo 163-1325 Japan +81 3 6901 5700 telephone +81 3 5322 2109 fax Pall Corporation has offices and plants throughout the world. To locate the Pall office or distributor nearest you, visit www.pall.com/contact.

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